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Docket No.: 09626/000L207-USO
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Tetsuya ATSUMI, et al.

Application No.: 09/193,928

Art Unit: 3711

Filed: November 17, 1998

Examiner: S. L. BLAU

For: LIGHT-WEIGHT SHAFT FOR GOLF CLUBS

DECLARATION BY INVENTOR TETSUYA ATSUMI UNDER 37 C.F.R. 1.132

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

RECEIVED

JUL 15 2004

TECHNOLOGY CENTER R3700

I, Tetsuya Atsumi, hereby declare:

1. I am a citizen of Japan and I am over 21 years of age.
2. I am a named joint inventor of the above-captioned patent application and submit this declaration in support of the patentability of pending claims 1, 21, and 22.
3. I tested golf club shafts having, in sequential order, an inner layer being a first angled layer concentric with a longitudinal axis of the shaft, the first angular layer having a circular cross section; a first straight layer formed on the first angled layer, the first straight layer being concentric with the longitudinal axis and having a circular cross section; a second angled layer formed on the first straight layer, the second angled layer being concentric with the longitudinal axis and having a circular cross section; a second straight layer formed on the

second angled layer, the second straight layer being an outer layer concentric with the longitudinal axis and having a circular cross section; wherein the shaft has a length along a longitudinal direction, each of the layers extend over an entirety of the length of the shaft, each of the layers includes fiber-reinforced composite material containing reinforcing fibers, the reinforcing fibers of the second angled layer being oriented at an angle relative to the longitudinal direction of the shaft; and the second angled layer has at least one of the angle and a thickness effective to provide the shaft with a torsional strength of at least 120 kgf x m x degrees and a weight of from 30 to 40 g. I measured the torsion angle, crushing strength, torsional strength and three point bending for various angles of the second angular layer. I submit the results of the tests in Table 1, attached hereto as Exhibit A.

4. It is my opinion that the layering conventions and the angles of the second angled layer yielded unexpected results in the form of a lightweight golf club shaft with particular strength and flexibility. These shafts had surprisingly unexpected torsion angle, crushing strength, torsional strength and three point bending for a golf club shaft weighing 37 grams.

5. I do not believe that any of the cited references disclose a golf club shaft possessing a weight of 30 to 40 grams with the strength and flexibility characteristics shown in Table 1. I do not believe that any of the cited references disclose the layering scheme and weights with the strength and flexibility characteristics of my invention. The improvement in the strength and flexibility of a lightweight golf club shaft as shown in Table 1 was unexpected and surprising.

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6. I further declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true. I further declare that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States code, and that such willful false statements may jeopardize the validity of the instant application or of any patent issued thereupon.

Respectfully submitted,

Dated: Jun. 10. 2004

Tetsuya Atsumi
Tetsuya Atsumi

Shaft Weight {g}	Stack Angle for Second Angled Layer	Torsion Angle lb - ft °)	Crushing Strength [kgf/10 mm]				Torsion Strength [kgf.cm.]	Three Point Bending [kgf]		
			a Butt to 10 mm	b Butt to 100 mm	c Butt to 200 mm	d Butt to 300 mm		A Tip to 175 mm	B Tip to 525 mm	C Butt to 175 mm
A 37	±20°	5.5	5.8	6.0	5.6	6.1	156.9	62.7	40.7	39.3
B 37	±45°	5.2	8.5	8.4	8.5	7.8	147.5	60.7	48.3	43.3
C 37	±60°	5.4	8.8	9.2	9.5	9.6	179.3	62.3	49.7	46.3
D 37	±70°	5.5	11.7	11.4	11.8	10.6	171.4	60.7	51.7	51.7
E 37	±75°	5.7	12.2	10.9	10.3	12.1	156.6	64.7	52.3	50.3
F 37	±80°	5.8	10.6	11.6	11.4	11.8	159.4	62.3	51.3	54.0